WHAT IS CLAIMED IS:

We claim:

1. A method for locating an object utilizing inverse multilateration, the method comprising:

    receiving signal pulses from a transmitting object at a mobile detection device;

    calculating a slant range between the transmitting object and the mobile detection device;

    calculating a position vector of the transmitting object based at least in part on the slant range.

2. The method of claim 1 wherein the calculation of the position vector of the transmitting object further comprises computing $\bar{v}_1 = \left(A_1^T Q^{-1} A_1\right)^{-1} A_1^T Q^{-1} \cdot b_1$.

3. The method of claim 1 wherein the calculation of a slant range further comprises use of time of arrival data.

4. The method of claim 3 wherein a known distribution of noise is added to the time of arrival data.

5. The method of claim 1 wherein receiving signals pulses from a transmitting object further comprises computing the repetition time between adjacent pulses.

6. The method of claim 1 wherein the signal pulses are transmitted from a fixed object and the mobile detection device is airborne.

7. A system for locating an object utilizing inverse multilateration, the method comprising:

a receiver for receiving signal pulses from a transmitting object at a mobile detection device;

a calculator for calculating a slant range between the transmitting object and the mobile detection device; and

a position vector calculator for calculating a position vector of the transmitting object based at least in part on the slant range.